

TG120 - Description and Specifications

TG120 - 20MHz Dial-Set Function Generator

- ▶ 20MHz dial set function generator
- ▶ 0.2Hz to 20MHz frequency range
- ▶ Sine, square and triangle waveforms plus dc
- ▶ 10mV to 20V pk-pk from 50 Ohms
- ▶ DC offset control with zero detent
- ▶ Variable symmetry control
- ▶ External sweep input
- ▶ Very low cost.

20MHz from a low-cost generator

Most lower cost function generators use a technology which enables them to operate up to no more than 2MHz.

The TG120 utilises an alternative technology which retains its waveform quality right up to 20MHz.

Sweep mode operation (external)

The TG120 can be operated in sweep mode by connecting an external sweep voltage. A sweep range of at least 20:1 can be achieved.

Variable symmetry for pulse and ramp waveforms

The TG120 provides switchable bi-directional variable symmetry which enables variable duty cycle pulse waveforms and sawtooths to be generated.



Wide range level control

The TG120 provides a main output with a maximum emf of 20V pk-pk from a 50Ω source.

An amplitude vernier with a range of 26dB is combined with two -20dB switched attenuators to provide levels down to 10mV pk-pk. Variable DC offset of ±10V is available via a centre detent control.

Auxilliary Output

An auxilliary output provides a fixed 0 to +5V level suitable for driving both TTL and CMOS loads.

SPECIFICATIONS

Frequency

Frequency Range: 0.2Hz to 20MHz in 8 overlapping decade ranges with fine adjustment by a vernier.

Vernier Range: >10:1 on each range.

Vernier Accuracy: Typically ±5% of full scale.

Sweep Mode External

Input Impedance: 82 kΩ

Sweep Range: Typically > 20:1

Input Sensitivity: Typically 0 to 2V for 10:1 sweep

Max. Input Voltage: ±10V

Max. Slew Rate of sweep voltage: 0.1V/us

Operating Modes

(Specifications apply for the top decade of each frequency range and output 10V peak-to-peak into 50Ω termination).

Sine

Distortion: Typically 2% on 200, 2k and 20k ranges.

Amplitude Flatness: ±0.2dB to 200kHz; ±2dB to 20MHz.

Triangle

Linearity: Typically 99% on kHz ranges.

Squarewave

Rise and Fall Times: <22ns

DC Range: $\pm 10V$ from 50Ω

Symmetry

Symmetry Range: Typically variable from 1:6 to 6:1 up to 500kHz.

Outputs

50 Ohms

Three switch-selectable ranges with 26dB vernier control within each range.

0dB Range: 1V to 20V peak-to-peak (0.5V to 10V into 50Ω).

-20dB Range: 100mV to 2V peak-to-peak (50mV to 1V into 50Ω)

-40dB Range: 10mV to 0.2V peak-to-peak (5mV to 0.1V into 50Ω)

DC Offset Range: $\pm 10V$ from 50 W. DC offset plus signal peak limited to $\pm 10V$ ($\pm 5V$ into 50Ω).
DC offset plus waveform attenuated proportionally in -20dB and -40dB position.

TTL/CMOS

Capable of driving 4 standard TTL loads.

General

Power: 230V or 115V nominal 50/60Hz, adjustable internally; operating range $\pm 14\%$ of nominal; 30VA max. Installation Category II.

Operating Range: $+5^{\circ}C$ to $+40^{\circ}C$, 20% to 80% RH.

Storage Range: $-10^{\circ}C$ to $+65^{\circ}C$

Environmental: Indoor use at altitudes to 2000m, Pollution Degree 1.

Electrical Safety: Complies with EN61010-1.

EMC: Complies with EN55011 and EN50082-1.

Size: 220(W) x 82(H) x 230(D) mm, (10.3 x 3.4 x 9.2") excluding feet.

Weight: 1.5 Kg (3.3lb).

Thurlby Thandar Instruments Ltd. operates a policy of continuous development and reserves the right to alter specifications without prior notice.